REMARKS

Claims 1-2, 4, 6, 9-11, 21, and 25 are pending and are rejected. Claim 1 is amended. Claim 9 is canceled. Reconsideration and allowance of Claims 1-2, 4, 6, 10-11, 21, and 25 are respectfully requested.

Claim Rejections under 35 USC §103

Claims 1, 2, 4, 10-11, 21, and 25 are rejected under 35 USC §103(a) as being unpatentable over U.S. Patent Application Publication No. 2002/0150115 to Onvural et al (hereinafter referred to as Onvural) in view of U.S. Patent 6,895,012 to Amou et al (Amou) and "The Priority Token Bank in a Network of Queues" by Lynn et al (Lynn).

Independent Claim 1

Applicants' Claim 1 recites (as amended):

A traffic management processor for scheduling packets for transmission across a network, comprising:

a departure time calculator for generating a departure time for each packet;

a departure time prioritizer for comparing the departure times with each other to determine which of the departure times is the earliest, wherein the departure time prioritizer comprises:

a table having a plurality of rows, each for storing the departure time for a corresponding packet, wherein the departure times can be stored in any order in the table; and

compare logic having a plurality of inputs coupled to corresponding rows of the table;

a token generator for generating a token for each packet, wherein the token generator comprises a priority encoder coupled to the compare logic and configured to generate each token in response to a next free address in the table; and

a packet memory for storing a payload for each packet at an address indicated by the packet's token, wherein the departure time for each packet is stored in the row of the table addressed by the packet's token.

None of the cited references, whether taken individually or in combination, disclose or suggest the traffic management processor of Applicants' Claim 1.

First, the traffic management processor of Applicants' Claim 1 includes a table for storing the departure times for the packets and includes a *separate* packet memory for storing payloads of the packets. Further, a token is generated for each packet, and then the packet's departure time is stored in a row of the table *addressed by the token*, and its payload is stored in a location of the packet memory *addressed by the same token*. Accordingly, because a packet's token determines the locations of the table and the packet memory in which the packet's departure time and the payload, respectively, are stored, the packet *departure times can be stored in any order in the table* and the packet payloads can be stored in any order in the packet memory, irrespective of the packets' relative departure times.

In contrast, Onvural teaches that the packets are sorted by sorter 14 and then stored in slots of the output packet store 20 *according to their departure times*, for example,[1] and then the packets are sequentially output from consecutively addressed slots of the sorter 20 by incrementing the sorter index 22. Thus, each slot in Onvural's packet store 20 is associated with a corresponding departure time, and thus the packet store 20 must store the packets in a predetermined order according to their departure times.[2] In this manner, Onvural states, the packet store 20 can be implemented as either as a number of shift registers or as a circular linked list.[3]

Thus, while Onvural assigns a specific departure time to each slot in the packet store 20, which results in the packet store 20 being sparely populated with packets,[4] the traffic management processor of Applicants' Claim 1 can store the packet

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1 Paragraph [0024] states: "The sorter places the packets in the slots of the output packet store according to their timestamps. Each slot 26 in the output packet store 20 corresponds to a discrete transmission time. The next packet transmitted by the node is the packet stored in the slot 26 corresponding to a timestamp closest to the current time. The index is used to locate this packet within the output packet store."

2 Paragraph [0035] states: "the sorter keeps track of the current time using a pointer 28 stored in a register in the control hardware 24. The pointer 28 indexes a particular slot in the output packet store 20 corresponding to the current time. The pointer is updated every time a packet is transmitted. Packets are inserted into the output packet store 20 based on their timestamped deadlines. The slot in which the packet is inserted is always determined relative to the slot being pointed to as the current time. In this way the slots of the output packet store can be implemented either as a number of ***shift registers or as a circular linked list*** (emphasis added)."

3 Id.

departure times in any order in the table by using the packets' tokens to address rows of the table.

Therefore, Onvural fails to disclose or suggest a traffic management processor including "a table having a plurality of rows, each for storing the departure time for a corresponding packet, wherein the departure times can be stored in any order in the table," "a token generator for generating a token for each packet," and "a packet memory for storing a payload for each packet at an address indicated by the packet's token, wherein the departure time for each packet is stored in the row of the table addressed by the packet's token," as recited in Applicants' Claim 1. Accordingly, Applicants' Claim 1 is patentable over Onvural.

The Office Action's states that "it would have been obvious to use the system of Amou in the system of Onvural to make the system more efficient." Applicants disagree.

The system of Amou achieves the same function as the system of Amou using an entirely different technique. More specifically, modifying the system of Onvural to include the teachings of Amou would require additional circuitry to store the departure times in a separate memory and additional circuitry to compare the departure times with each other, and therefore would undesirably increase the size and complexity of Onvural's system without providing additional functionaltiy. Further, if Onvural's system is modified to include the teachings of Amou, as suggested by the Office Action, then Onvural's output packet store 20 could no longer be implemented as either as a number of shift registers or as a circular linked list, which appears to be an advantage taught by Onvural. Thus, there is no *reason or need* to modify Onvural to include the teachings of Amou, as suggested by the Office Action.

The PTO has the burden of establishing a prima facie case of obviousness under 35 USC §103. It ***must*** show that some objective teaching in the prior art generally held by one of ordinary skill in the art would ***lead*** an individual to combine the relevant teachings of the references. In re Fine, 837 F.2d 1071, 1074 (Fed. Cir. 1988). It is well settled that a combination may be patentable even if composed entirely of old elements. Rosemount, Inc. v. Beckman Instruments, Inc., 727 F.2d

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4 See Onvural, paragraph [0024].

1540, 1546 (Fed. Cir. 1984). Indeed, a combination of relevant teachings alone is insufficient grounds to establish obviousness, absent some teaching or suggestion to do so. Id. At 1075. Therefore, ***without some reason or motivation in the cited references*** to combine prior art teachings, the Examiner has failed to establish a prima facie case for obviousness. Accordingly, because the Examiner has failed to point to any language in the references that suggests modifying Onvural's system to include the teachings of Amou, the Examiner has NOT made a prima facie case of obviousness of Applicant's Claim 1 under 35 USC 103.

Therefore, because none of the cited references, whether taken individually or in combination, disclose or suggest all the limitations of Applicants' Claim 1, Claim 1 is patentable over the cited references.

Claims 2, 4, 6, and 10-11 depend from Claim 1 and therefore distinguish over the cited references for at least the same reasons as Claim 1.

No New Search Required

The language added to Claim 1 in the above-indicated amendments appears in original Claims 9 and 21, which were presumably searched for by the Office in the two previous office actions, and therefore the amendments to Claim 1 do not necessitate a new search by the Office.

Indeed, it is believed that the amendments to Claim 1 place Claim 1 in better condition for allowance, and therefore serve to expedite prosecution of the present application.

Independent Claim 21

Applicants' Claim 21 recites:

A method for scheduling a plurality of packets for transmission across a network, comprising:

generating a token for each packet;

calculating a departure time for each packet;

storing each packet's departure time at a location in a table addressed by the packet's token, wherein the token comprises a next free address in the table;

storing a payload for each packet at a location in a packet memory addressed by the packet's token;

comparing the departure times with each other to determine which departure time is the earliest; and

transmitting the packet corresponding to the earliest departure time.

None of the cited references, whether taken individually or in combination, disclose or suggest the method of Applicants' Claim 21.

As discussed above with respect to Claim 1, Onvural discloses that the packets are stored in slots of packet store 20 according to their departure times, and are output by sequentially selecting consecutively addressed slots of the output packet store 20.

In contrast, for each packet of Applicants' Claim 21, a token is generated as a next free address in the departure time table, the packet's payload is stored in a location of the packet memory addressed by the token, and the packet's departure time is stored in a location of the departure table addressed by the token. The tokens are NOT departure times, and thus the departure times are NOT stored in the table according to their relative departure times, and the packet payloads are NOT stored in the packet memory according to packet departure times. As a result, for packets processed according to the method of Applicants' Claim 21, the packet departure times can be stored in the table in any order, and the packet payloads can be stored in the packet memory in any order (e.g., unrelated to packet departure times).

Accordingly, because Onvural does not disclose or suggest "generating a token for each packet," "storing each packet's departure time at a location in a table addressed by the packet's token, wherein the token comprises a next free address in the table," and "storing a payload for each packet at a location in a packet memory addressed by the packet's token," Claim 21 is not obvious over Onvural.

Further, as discussed above, there is no reason to modify the system of Onvural to include the teachings of Amou, and therefore the Office Action's proposed combination of Onvural and Amou cannot properly form a prima facie case of obviousness under 35 USC 103. Accordingly, Claim 21 is patentable over the cited references.

Claim 25 depends from Claim 21 and therefore distinguishes over the cited references for at least the same reasons as Claim 21.

Claims 6 and 9

Claims 6 and 9 are rejected under 35 USC §103(a) as being unpatentable over Amou in view of Onvural and Lynn, and in further view of U.S. Patent 6,011,798 to McAlpine.

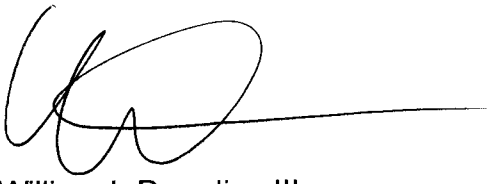
Claim 6 depends from Claim 1 and therefore distinguishes over the cited references for at least the same reasons as Claim 1.

Claim 9 is canceled, and therefore its rejection is now moot.

CONCLUSION

In light of the above remarks, it is believed that Claims 1-2, 4, 6, 10-11, 21, and 25 are in condition for allowance and, therefore, a Notice of Allowance of 1-2, 4, 6, 10-11, 21, and 25 is respectfully requested. If the Examiner's next action is other than allowance as requested, the Examiner is requested to call the undersigned at (408) 236-6646.

Respectfully submitted,



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Dated

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